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FISSURIDON PEARSONI, A NEW FOSSIL MACROPODID (MARSUPIALIA) FROM QUEENSLAND

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ABSTRACT

A new fossil macropodid, *Fissuridon pearsoni*, is described from the Pleistocene fluviatile deposits of the eastern Darling Downs area, southeastern Queensland. The species is at present known only from fragmentary mandibular specimens and comprises one of the rarest forms yet recorded from the diverse fauna of those sediments.

The fauna from the Pleistocene fluviatile deposits of the eastern Darling Downs area, southeastern Queensland included a diverse assemblage of browsing and grazing macropodids, many of which were widespread throughout mainland Australia at that time. Bartholomai (1963, 1966, 1967, 1970, 1972) has previously investigated aspects of the fossil Macropodidae of Queensland and the present contribution represents a continuation of that part of the faunal study.

The material comprising the present sample was, in part, considered by De Vis (1895) but its distinctness was not formally recognized. None of the specimens was illustrated nor specifically mentioned by De Vis (1895) so doubt exists regarding the taxon under which they were included at that time. Four of the paratypes bear the manuscript name '*Macropus pales*' in De Vis's handwriting. The specimen selected as holotype was donated to the Queensland Museum by the late Mr W. H. Pearson of Clifton, whose collections have done so much to improve knowledge of the Pleistocene fossil marsupials of the Darling Downs area. The species is named after him.

All measurements throughout are in millimetres.

Genus **Fissuridon** nov.

TYPE SPECIES: *Fissuridon pearsoni* sp. nov.

DIAGNOSIS: The characters of this genus are those of the type species until any other species is described.

Fissuridon pearsoni sp. nov.

(Pl. 24, figs. 1–4; pl. 25, figs. 1–2)

MATERIAL: Holotype, F3921, partial left mandibular ramus with M_1–M_2, P_3 exposed by fenestration, and M_3 unerupted but loose in the ramus, juvenile, King Creek, near M.R. 039454 Clifton 1 mile map, southeastern Queensland, from Pleistocene fluviatile depostis.

F1656, partial left mandibular ramus with M_4 broken, adult, Dalby, Darling Downs, F3922, partial left M_4, adult, 'Sharrow' (Harrow, Cambooya), Darling Downs, F3925, partial right mandibular ramus with M_3, M_4 unerupted, juvenile, Darling Downs. F3926, partial right M_4, adult, Darling Downs. F3927, partial right mandibular ramus with M_4, adult, Darling Downs. F3928, isolated right M_4, Darling Downs. F3930, partial right mandibular ramus with I_1 incomplete, M_1–M_3, juvenile, near Dalby, ?Condamine River at Springvale, Darling Downs. F5440, partial right mandibular ramus with partial M_3, M_4, adult, Condamine River, at M.R. 058407 Dalby 1 mile map, Darling Downs.

SPECIFIC DIAGNOSIS: Species moderately large. P_3 small, with bifid longitudinal crest. Molars with extremely high, slightly anteriorly rotated lophids, with anterior cingulum high, raised to slightly more than three-quarters the height of protolophid; links high; extremely deep groove descends posterior surface hypolophid, from near hypoconid to point mesiad to posterolingual base of crown, flanked by slightly flared, strong ridge from hypoconid to posterolingual crown base; hypoconid rotated anterolingually to above axis of crown, with associated reduction in width of unworn hypolophid; protoconid also slightly rotated anterolingually.

DESCRIPTION: Mandible relatively deep, strong, but comparatively narrow below anterior cheek teeth, with longitudinal axis moderately concave laterally.

Symphysis elongate, not ankylosed, deflected ventrally at low angle to base of ramus; geniohyal pit relatively deep, low, slightly anterior to posterior symphysial limit. Diastema elongate. Ventral margin of ramus broadly rounded posterior to symphysis. Mental foramen relatively large, close to and about one-half distance along diastema. Ramus with slight labial groove below anterior cheek teeth, immediately below alveolar margin. Lingually, slight depression present dorsal to base of mandible, leading

TABLE 1

MEASUREMENTS FOR *Fissuridon pearsoni* SP. NOV.

Specimen	P_3	M_1	M_2	M_3	M_4
F3921*	7·3 × 3·5	14·3 × 8·4	17·0 × 9·8	19·8 × 10·6	—
F3925	—	—	—	18·8 × 10·2	—
F3927	—	—	—	—	22·9 × 12·3
F3928	—	—	—	—	22·7 × 11·7
F3930	—	—	16·9 × 9·5	19·5 × 10·5	—
F5440	—	—	—	—	20·5 × 10·9

* Holotype *Fissuridon pearsoni* sp. nov.

posteriorly into pterygoid fossa. Post-alveolar shelf short, leading to post-alveolar ridge ascending onto mesial wall of coronoid process, above mandibular foramen. Anterior wall of coronoid process reclining slightly. Angle of mandible, condyle and bulk of coronoid process not preserved.

I_1 elongate, nearly horizontal, lanceolate, curving lingually and approximated ventrally towards tip, with resultant mesial facet of wear. Crown blade-like, with enamel flanged dorsolabially and ventrolingually; enamelled laterally, ventromesially to about one-half depth of tooth from below, and mesially to slightly below dorsolabial flange. Surface of wear with upper incisors subhorizontal, near planar.

P_2 and DP_3 unknown.

P_3 very small, weak, subovate in basal outline, being only very slightly narrower anteriorly than posteriorly, and being extremely slightly constricted mesially. Longitudinal crest bifid, slightly subdivided posterior to mid-point by weak, vertical, labial and lingual grooves; crest continues posterolingually from posterior cuspid towards base of crown. Crown base slightly swollen lingually, anteriorly and labially.

$M_1 < M_2 < M_3 < M_4$; molars subrectangular, slightly constricted across talonid basin; lophids extremely high, with protolophid slightly convex posteriorly in occlusal view, but with hypolophid exhibiting considerably greater curvature; hypolophid approximately as broad as protolophid in M_1 and M_2, but slightly narrower in M_3 and M_4. Trigonid basin broad, moderately long, its length approximately equalling distance between lophid crests, more restricted labially than lingually, with development of anterolabial fossette. Forelink extremely high, strong, descending only slightly from protoconid to anterior cingulum, slightly labiad to mid-point; occasionally ornamented by slight vertical ridges. Anterior cingulum extremely high, being raised slightly more than three-quarters the height of protolophid; in slightly worn teeth, cingulum represents a third major transverse grinding surface. Protoconid somewhat rotated anterolingually, producing slightly anteriorly rotated protolophid; labial base of protolophid considerably larger than lingual, with anterolabial surface below protoconid usually rounded, but occasionally forming well-defined angular ridge to trigonid; labial surface usually with slight, variable, broad, vertical grooves; slight ridges descend anteriorly and posteriorly from metaconid, with posterior ridge occasionally well developed; protolophid crest generally cleft by slight anterior and posterior vertical grooves, about one-half distance between cuspids. Midlink from hypoconid extremely high, strong, descending slightly anterolingually to unite with strong posterolingual ridge from protoconid above talonid basin; ridges usually not abutting exactly, frequently over-riding one another, with junction marked by vertical labial and lingual grooves. Talonid basin slightly constricted, sharply V-shaped in labial moiety, but broadly U-shaped and elevated lingually; lingual moiety basally with variably developed, generally broad, low, transverse ridges. Hypoconid considerably rotated anterolingually, being positioned above axis of crown, with hypolophid exhibiting considerable anterior rotation; labial base of hypolophid considerably larger than lingual, with anterolabial surface below hypoconid usually broadly angled as ridge to talonid; labial surface usually with variable, broad, vertical grooves; extremely slight, variable ridges descend anteriorly and posteriorly from entoconid, with anterior ridge occasionally well developed; hypolophid crest narrow, generally

cleft by vertical anterior and posterior grooves. Posterior surface of hypolophid with deep, gaping groove, descending diagonally from near hypoconid to point mesiad to posterolingual base of crown; strong ridge from hypoconid descending to posterolingual base of crown flanking groove; ridge slightly flared, separated from posterior surface of crown by slight parallel groove. Posterolingual fossette occasionally present at base of groove.

DISCUSSION: Remains of *Fissuridon pearsoni* sp. nov. are not abundant in the Pleistocene deposits of Queensland, but because of the structure of the lower molar teeth the species is readily separable from other contemporary fossil macropodines and also from modern species. The characteristic gaping, diagonal groove on the posterior surface of the hypolophid and the extremely high, lophid-like anterior cingulum are quite distinct in unworn teeth, and are emphasized with wear. The upper dentition is not known as yet, although a single maxilla, F1787, exhibiting molars with high lophids and strong links may be referrable to the species.

Compared with other Upper Cainozoic species, the molars in *F. pearsoni* show some resemblance to those in *Macropus titan* Owen, *M. ferragus* (Owen) and *M. pan* De Vis. However, the intraspecific morphological differences between the teeth within the species is considerably less than that between any of them and *F. pearsoni*. In *M. titan*, the posterior surface of the hypolophid is generally marked by a moderately slight, broad groove, terminating basally in a sharply defined, flared, posterolingual fossette, while in *M. ferragus* a shallow to moderate, near vertical groove descends linguad to the axis of the crown. *M. pan* frequently possesses a better defined, more oblique groove than *M. ferragus* but this in no way approaches the extreme development present in *F. pearsoni*.

The species is one of the largest fossil species of *Macropus* yet recorded and a table of measurements for the referred sample is provided in Table 1. The sample is too small to enable any meaningful statistical evaluation to be undertaken.

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PLATE 24
Fissuridon pearsoni sp. nov.

FIG. 1: Lateral view of holotype, F3921, King Creek, near M.R. 039454 Clifton 1 mile map, SE.Q., × 1.

FIG. 2: Stereopair of occlusal view of F3921, × 1.

FIG. 3: Lateral view of F3927, Darling Downs, SE.Q., × 1.

FIG. 4: Stereopair of occlusal view of F3927, × 1.

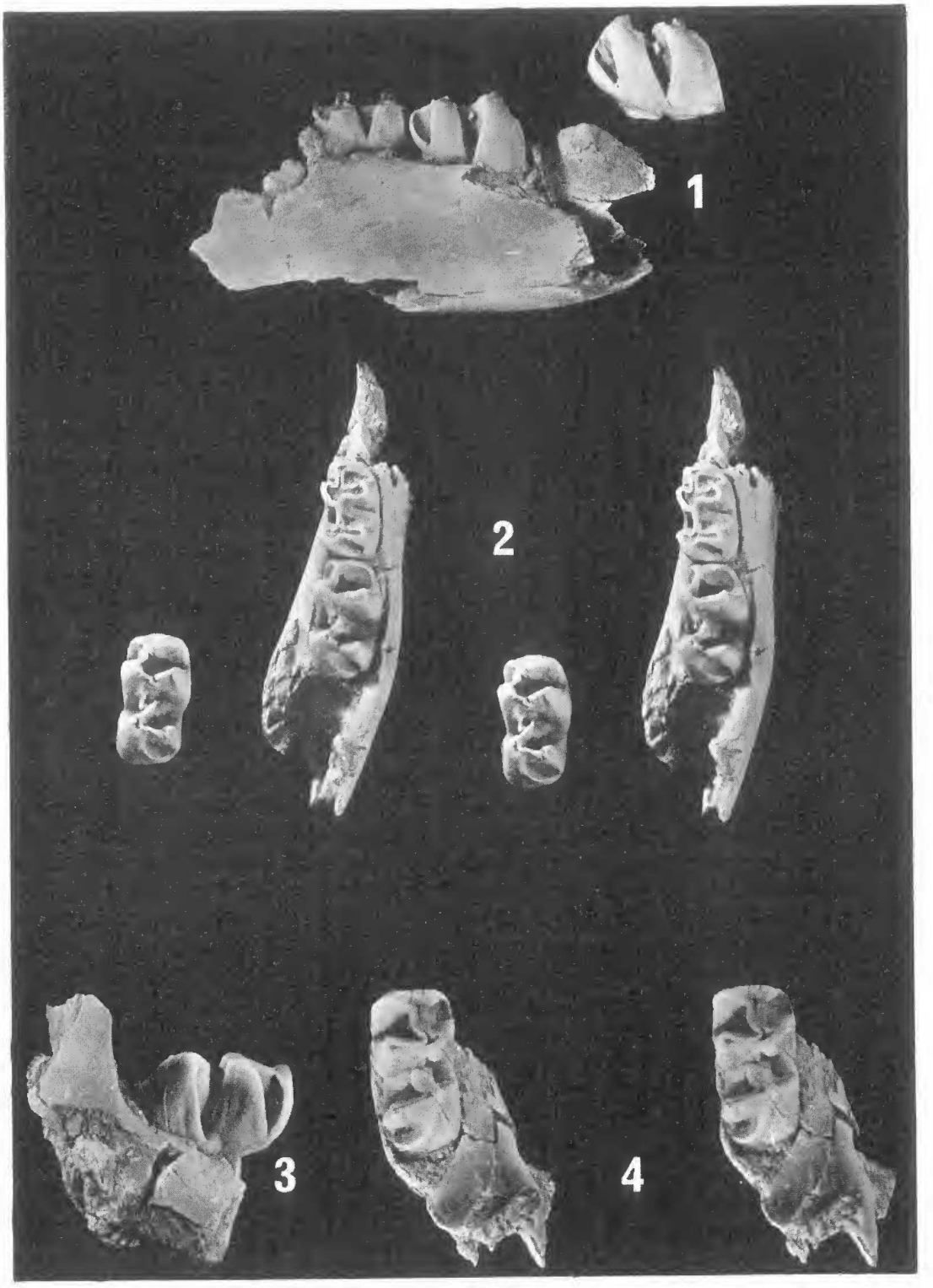
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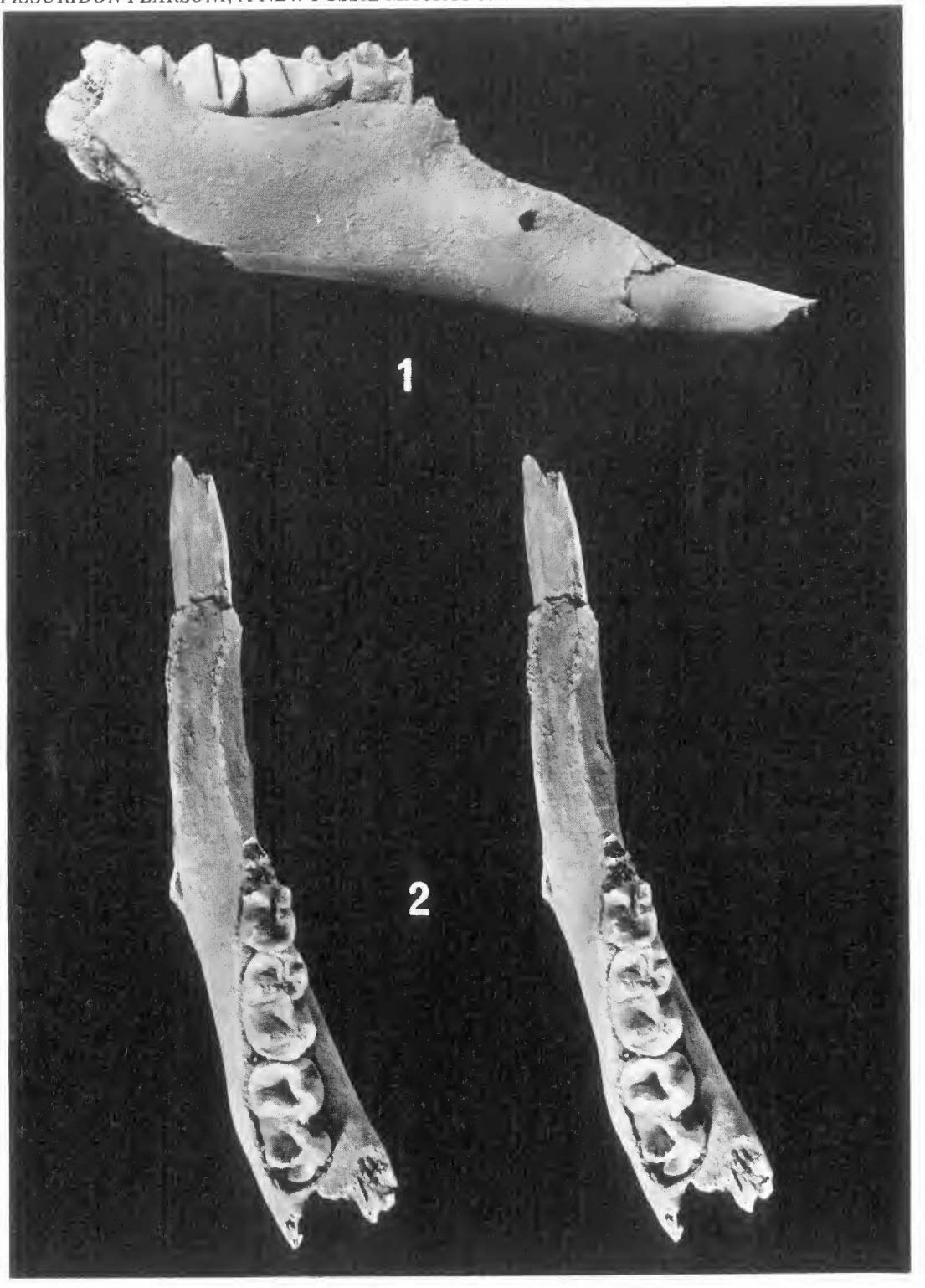
PLATE 25
Fissuridon pearsoni sp. nov.

FIG. 1: Lateral view of F3930, near Dalby, ? Condamine River at Springvale, SE.Q., × 1.

FIG. 2: Stereopair of occlusal view of F3930, × 1.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